Archives of Biochemistry and Biophysics

Editors

E. S. G. Barrón
Jesse P. Greenstein
E. Newton Harvey
J. G. Kirkwood
K. Linderstrøm-Lang
C. M. McCay
Thomas L. McMeekin
A. Neuberger
F. F. Nord
E. C. Pollard
E. W. Putnam
J. T. Randall
C. Rimington
John C. Sheehan
H. Theorell
K. V. Thimann
W. W. Umbreit
C. H. Werkman
R. J. Williams
R. W. G. Wyckoff

VOLUME 55

1955

ACADEMIC PRESS INC., PUBLISHERS

Copyright, 1955, by Academic Press Inc.
Made in the United States of America

FROZEN
1/21/98

57-811

QP501
A77

v. 55-56

CONTENTS OF VOLUME 55

No. 1, March, 1955

Charles W. Carr and Kenneth R. Woods. Studies on the Binding of Small Ions in Protein Solutions with the Use of Membrane Electrodes. V. The Binding of Magnesium Ions in Solutions of Various Proteins 1

Lois M. Zucker, Joseph Seronde, Jr., and Theodore F. Zucker. Acetylating Activity in the Rat in Relation to Other Signs of Pantothenic Acid Deficiency 9

R. E. Glegg and D. Eidinger. A Method for Fractionating the Carbohydrate Components of Bone 19

John D. Spikes, Rufus Lumry and John S. Rieske. Inhibition of the Photochemical Activity of Isolated Chloroplasts. I. Salts 25

F. L. Allen. Observations on Photosynthesis and Related Systems. I. Influence of Anaerobiosis on Photosynthetic Rates During Continuous Irradiation 38

J. Ferreira Fernandes and L. C. U. Junqueira. Protein and Ribonucleic Acid Turnover Rates Related to Activity of Digestive Enzymes of Pigeon Pancreas 54

Maurice Green and M. A. Stahmann. Virus Inhibition by Some Amino Acid Analogs 63

Anthony T. Soldo. Vitamin B_{12} and Nucleic Acid Production in *Euglena* 71

Bernard S. Strauss. Studies on the Metabolism of Acetate by Acetate-Requiring Mutants of *Neurospora crassa* 77

George C. Webster and J. E. Varner. Peptide-Bond Synthesis in Higher Plants. III. The Formation of Glutathione from γ-Glutamylcysteine 95

R. P. Geyer, Ethel J. Bowie, Mary S. Gongaware and Marion A. Ryan. Studies on the Metabolic Interplay of Fatty Acids, Succinate and Electrolytes 104

Anson R. Cooke. The Toxic Constituent of *Indigofera endecaphylla* 114

Morris London, Rosemary McHugh, and Perry B. Hudson. Thermal Stabilization of Prostatic Acid Phosphatase by Fluoride 121

G. W. Kidder and Virginia C. Dewey. The Purine and Pyrimidine Requirements of *Glaucoma scintillans* 126
John W. Kelly. Suppression of Metachromasy by Basic Proteins 130
Keith J. Laidler and Anthony J. Beardell. Molecular Kinetics of Muscle Adenosinetriphosphatase III. Influence of Hydrostatic Pressure 138
Irene Chang and B. Connor Johnson. The Effect of Vitamin B_{12} on Some Aspects of Glycine Metabolism 151
J. Raymond Klein and Paul Bianchi. Preparation of Radioactive Iron from Tissue for Assay of Activity 157
R. H. Hageman and Daniel I. Arnon. The Isolation of Triosephosphate Dehydrogenase From Pea Seeds 162
Julius Schultz, George Grannis, Hazel Kimmel and Harry Shay. The Characterization of Proteins of Animal Sera Separated by Zone Electrophoresis on Starch 169
Myron K. Brakke. Zone Electrophoresis of Dyes, Proteins and Viruses in Density-Gradient Columns of Sucrose Solutions 175
K. K. Tsuboi and P. B. Hudson. Acid Phosphatase. III. Specific Kinetic Properties of Highly Purified Human Prostatic Phosphomonoesterase 191
K. K. Tsuboi and P. B. Hudson. Acid Phosphatase. V. The Nature of Inactivation and Stabilization of Purified Human Red Cell Phosphomonoesterase 206
Virgil L. Koenig, Louise Larkins and J. D. Perrings. Isolation and Physical Characterization of Sodium Deoxyribonucleate from Pneumococcus Type III 219
William C. Boyd, Elizabeth Shapleigh and Marjorie McMaster. Immunochemical Behavior of a Plant Agglutinin (Lectin) 226
R. F. Steiner. Reversible Association Processes of Globular Proteins. IX. The Effect of pH and Electrolytes upon an Antigen-Antibody Combination 235
Frederick J. Di Carlo, Alfred S. Schultz and Adrienne M. Kent. Soybean Nucleic Acid 235
M. E. Becker and S. E. Hartsell. The Synergistic Action of Lysozyme and Trypsin in Bacteriolysis 257
C. V. Ramakrishnan, R. Steel and C. P. Lentz. Mechanism of Citric Acid Formation and Accumulation in *Aspergillus niger* . 270
Erwin Schwenk, George J. Alexander, Thomas H. Stoudt and Charles A. Fish. Studies on the Biosynthesis of Cholesterol. VII. Formation of Cholesterol Precursors by Yeast 274

Letters to the Editors

D. Robert Celander, R. P. Langlinais, and M. Mason Guest. The Application of Foam Technic to the Partial Purification of Urine Activator of Plasma Profibrinolysin 286

B. Kessler. The Ability of Higher Plants to Synthesize Antimicrobial Substances 287

Mika Hayano and Ralph I. Dorfman. The Conversion of Deoxycorticosterone to 19-Hydroxy-11-deoxycorticosterone by Adrenal Homogenate Residues 289

Harold Levy and Stanley Kushinsky. The Isolation of 19-Hydroxy-11-deoxycorticosterone and an Unknown, Active Mineralocorticoid from Bovine Adrenal Perfusions of Progesterone 290

K. G. Shenoy and G. B. Ramasarma. Iron as Stabilizer of Vitamin B_{12} Activity in Liver Extracts and Nature of so-called Alkali-stable Factor 293

David C. Herting and Stanley R. Ames. On the Gastric Lipolysis of Fat 295

H. J. Almquist and Stanley Maurer. The Effect of Antibiotic, Antioxidant, and Fat on Conversion of Carotene to Vitamin A in the Chicken 297

Book Reviews 299

Number 2, April, 1955

Herman C. Lichstein and Ruth B. Boyd. The Dual Role of Biotin in Glucose Metabolism of *Saccharomyces cerevisiae* 307

M. G. Vavich, J. W. Stull, N. Raica and A. R. Kemmerer. Effect of Nonfat Milk on the Utilization of Carotene and Vitamin A 310

Richard J. Block and Kathryn W. Weiss. Studies on Bovine Whey Proteins. IV. The Amino Acid Analyses of Crystalline β-Lactoglobulin and α-Lactalbumin by Quantitative Paper Chromatography 315

S. Chaberek, Jr., and F. C. Bersworth. Chelating Agents as Metal Buffers in Biological Systems. I. Principles and Use of Ethylenediaminetetraacetic Acid 321

J. McBroom Junge, C. O. Junge, Jr., and Edwin G. Krebs. A Study of Antigen-Antibody Reaction Rates by Light Transmission Measurements 338

John A. Carbon, R. Quentin Blackwell, J. C. Calandra and

L. S. Fosdick. The Inhibition of Anaerobic Glycolysis by Sodium *N*-Lauroyl Sarcosinate 356
S. H. Blondheim. Acetylation by Blood Cells 365
Jack Myers and F. A. Matsen. Kinetic Characteristics of Warburg Manometry 373
Eugene C. Jorgensen and T. A. Geissman. The Chemistry of Flower Pigmentation in *Antirrhinum majus* Color Genotypes. III. Relative Anthocyanin and Aurone Concentrations 389
C. V. Ramakrishnan and S. M. Martin. Isocitric Dehydrogenase in *Aspergillus niger* 403
Gerald C. Mueller, Eva Mae Quinn and Roland R. Rueckert. The Formation of 1-Phosphoerythrulose-4-C^{14} by Homogenates of Swiss Chard Leaves 408
M. I. Dolin. The DPNH-Oxidizing Enzymes of *Streptococcus faecalis*. II. The Enzymes Utilizing Oxygen, Cytochrome c, Peroxide and 2,6-Dichlorophenol-indophenol or Ferricyanide as Oxidants 415
George Fritz and Harry Beevers. Lipoxidase and the Oxygen Absorption of Homogenates from Corn Seedlings 436
T. A. Geissman and J. B. Harborne. The Chemistry of Flower Pigmentation in *Antirrhinum majus*. IV. The Albino (*—mm—nn*) Form 447
Royal A. Sullivan, Margaret M. Fitzpatrick, Elizabeth K. Stanton, Raymond Annino, George Kissel and Frank Palermiti. The Influence of Temperature and Electrolytes upon the Apparent Size and Shape of α- and β-Casein 455
George S. Beaudreau and LeMar F. Remmert. Krebs Cycle Activity of Particles from Bean Seedlings 469
Jacob Joseph Blum. The Enzymatic Interaction between Myosin and Nucleotides 486
Harlyn Halvorson, S. Spiegelman and R. L. Hinman. The Effect of Tryptophan Analogs on the Induced Synthesis of Maltase and Protein Synthesis in Yeast 512
Heinz Herrmann and Shirley R. Barry. Accumulation of Collagen in Skeletal Muscle, Heart and Liver of the Chick Embryo 526
Irwin R. Konigsberg and Heinz Herrmann. The Accumulation of Alkaline Phosphatase in Developing Chick Muscle 534
David S. Kinnory, Yoshiro Takeda, Mostafa S. Mohamed and David M. Greenberg. Metabolism of dl-Norvaline-3-C^{14} .. 546
I. S. Forrest, A. Grauer, M. Kreidl and C. Neuberg. Reactions between Neutral Compounds Involving Major Changes

in Hydrogen-Ion Concentration. Formation of Free Mineral Acids 555
Basilio Lopez-Ramos and Walter J. Schubert. On the Mechanism of Enzyme Action. LIX. A Relation Between the Structure of Mold Pigments and Their Interaction with Enzymes .. 566
G. Eberhardt and F. F. Nord. On the Phase Sequence of Methyl-*p*-Methoxy Cinnamate Formation and its Possible Relation to Lignification 578
Edna B. Kearney, Thomas P. Singer and Norma Zastrow. On the Requirement of Succinic Dehydrogenase for Inorganic Phosphate 579
C. O. Doudney and R. P. Wagner. The Reversal of Homocysteine Inhibition of Neurospora by Choline and Threonine 582
W. A. Andreae. The Photoinduced Oxidation of Manganous Ions 584
Betty G. DeBusk and Roger J. Williams. The Effect of Lipoic Acid on the Growth Rate of Young Chicks and Rats .. 587
F. Bruns and J. Neuhaus. Glycolytic Serum and Liver Enzyme Activities in Experimental Liver Damage 588
Agnete Munch-Petersen. Enzymatic Synthesis and Pyrophosphorolysis of Guanosine Diphosphate Mannose 592
Book Reviews 594
Books Received for Review 603
Author Index 605
Subject Index 610
Index of Book Reviews 614